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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/566,197	01/30/2006	John Steele Abbott III	SP03-100	3674
7590 Kees van der Sterre Corning Incorporated SP-TI-3-1 Corning, NY 14831				
			EXAMINER WYSZOMIERSKI, GEORGE P	
			ART UNIT 1793	PAPER NUMBER
			MAIL DATE 06/17/2008	DELIVERY MODE PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

### Office Action Summary

**Application No.**

10/566,197

**Applicant(s)**

ABBOTT III ET AL.

**Examiner**

George P. Wyszomierski

**Art Unit**

1793

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-11 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-11 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO/SF/88)  
Paper No(s)/Mail Date 1/30/06 12/17/07
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date \_\_\_\_
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_

Art Unit: 1793

1. Claims 3-5 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. It is unclear what the units are at the end of claim 3. Since "psi" is pounds per inch<sup>2</sup>, the addition of another inch term is confusing. Further, it is unclear whether this inch term should be in the numerator or the denominator in the expression as claimed. Claims dependent on claim 3 are likewise rejected under this statute.

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 1 and 2 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ohashi et al. (U.S. Patent 5,514,347).

Ohashi discloses forming a honeycomb structure by sintering an extruded structure of powder metal. Whatever structure is used for extrusion purposes by Ohashi is taken by the examiner to be equivalent to the claimed "honeycomb extrusion die". The structure so formed comprises an interconnected wall structure which forms channels as defined in claim 1. Ohashi column 6, lines 59-61 indicates that the holes in the honeycomb structure should be arranged at a variety of angles, in accord with what is recited in claim 2. Ohashi does not specify that the starting material is initially softened, or a final step of cooling below the softening temperature as required by the instant claims. However,

a) It would have been considered an obvious expedient to one of ordinary skill in the art to soften metal prior to performing an extrusion process with the metal, i.e. to ensure proper deformation of the metal with a relative absence of cracking or other negative consequences of a severe mechanical process such as extrusion.

b) With regard to cooling, the examiner submits that any practical application of an extruded metal would require that one cool the extrudate below the softening temperature after extrusion, in order to form a rigid mechanical structure. This would clearly be required if one intended to use the extrudate in a catalytic converter, as done by Ohashi.

Thus, a prima facie case of obviousness is established between the process of Ohashi and the presently claimed invention.

4. Claims 3-5 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ohashi et al. in view of Peters (U.S. Patent 4,574,459).

The Ohashi patent, discussed supra, refers to coating the holes in the honeycomb structure of the prior art with a material such as  $\text{Al}_2\text{O}_3$  (alumina); see Ohashi column 9, lines 41-67. Ohashi does not refer to this coating as "release coatings or lubricants" as recited in claim 3, and does not disclose vapor depositing such a coating. Peters indicates that it was known in the art, at the time of the invention, to coat holes in a honeycomb structure by vapor depositing material such as aluminum oxide and/or titanium carbonitride on the holes. Further, Peters column 3, lines 13-14 states that "a sequence of superposed layers of different compositions may be deposited" in this manner, thereby rendering a coating that includes the combination of TiCN and alumina as recited in claim 5 within the purview of the prior art. This disclosure of Peters, when taken with the honeycomb structure extrusion process as disclosed by Ohashi et al., would have rendered the process as claimed obvious to one of ordinary skill in the art.

5. Claims 6-11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ohashi et al.

Ohashi column 7 discloses a honeycomb article which includes a set of channels, and having a cell density and wall thickness overlapping the ranges as recited in claim 6. This article may be made of an aluminum alloy, and the channels may have a cross sectional shape as defined in claims 8 and 9; see Ohashi column 7, lines 45-59. The Ohashi structure is intended to have a catalyst coated on the walls thereof, and to function as part of a heat exchange structure, in accord with claims 10 and 11.

Ohashi indicates that the sum of the open area of the through holes relative to the total surface area of the walls in the prior art structure is a minimum of 5%, as opposed to the presently claimed "porosity below 5% by volume". The examiner's position is that no patentable distinction would exist between a structure having a porosity of 5% and one having a porosity just below this value. Thus, the structure as disclosed by Ohashi is held to create a prima facie case of obviousness of the invention as presently claimed.

6. The remainder of the art cited on the attached PTO-892 and 1449 forms is of interest. This art is held to be no more relevant to the claimed invention than the art as applied in the rejections, supra.

Art Unit: 1793

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to George Wyszomierski whose telephone number is (571) 272-1252. The examiner can normally be reached on Monday thru Friday from 8:00 a.m. to 4:30 p.m. Eastern time.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Roy King, can be reached on (571) 272-1244. All patent application related correspondence transmitted by facsimile must be directed to the central facsimile number, (571)-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

/George Wyszomierski/  
Primary Examiner  
Art Unit 1793

GPW  
June 11, 2008